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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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05/08/2006

Akihiro Tanaka

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7590

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SNELL & WILMER L.L.P. (Panasonic)

600 ANTON BOULEVARD

SUITE 1400

COSTA MESA, CA 92626

EXAMINER

NOORISTANY, SULAIMAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,509	Applicant(s) TANAKA ET AL.	
	Examiner SULAIMAN NOORISTANY	Art Unit 2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/4/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

This Office Action is response to the application (10526509) filed on 05/08/2006.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-23 recite “apparatus, control, computer readable medium ...”, which is directed at a computer program. A computer program is non-statutory because it is not considered a process, machine, manufacture, or composition of matter, or any new and useful improvement thereof. Because the claim may be directed toward a program the claim as a whole is considered non-statutory.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. However the claims will be given a broad reasonable interpretation for the purposes of examination as best understood.

In claim 1, the term “reference time” and “replacement object data” is indefinite and not clear what this is in reference to. However, the claims will be given a broad reasonable interpretation for the purposes of examination as best understood.

Claims 2-23 are rejected for similar reasons as stated for claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lu** U.S Patent App. No. **US 20020147990** in view of **Devara** U.S Patent App. No. **US 20020144260**.

Regarding claim 1, Lu teaches wherein a data replacement output apparatus for receiving a data stream composed of replacement object data and non-replacement-object data, replacing the replacement object data with replacement data, and outputting the data stream containing the replacement data, wherein each of the replacement object data, the non-replacement-object data, and the replacement data is composed of a plurality of units of data having the same size, the data replacement output apparatus comprising:

a determining unit operable to determine whether to perform a sequential output of a predetermined number of units of data constituting the replacement data, based on a result of comparison between (i) a total number of units of data constituting the replacement object data that have been received during a time period from a reference time to a current time (**current frequency and the past frequency -- [0030-0031]**) and (ii) a total number of units of data constituting the replacement data that have been output during the time period (**Fig. 4 -- Initially, video processor 320 determines the program start time, t0, and finish time, t1, using, for example, the EPG information of the program -- [0038]**), the determination being made each time a unit of data constituting the replacement object data is received while the sequential output of data

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is not performed (**a data frequency estimation apparatus and method based on time series and filtering methods – [0033-37]**); and

a data output unit operable to, if the determining unit determines to perform the sequential output of data, perform the sequential output of data by outputting a unit of data constituting the replacement data each time a unit of data constituting the data stream is received, operable to output a unit of data constituting the non-replacement-object data each time a unit of data constituting the non-replacement-object data is received while the sequential output of data is not performed, and operable to, if the determining unit determines not to perform the sequential output of data, output a unit of data constituting the non-replacement-object data each time a unit of data constituting the data stream is received (**The time frame T of incoming digital data transport stream 200 comprises non-replaceable packets 201-203 and 207-209, replaceable packets 204-206, and null packets 210-211 – [0029-0038]**).

However, Lu is silent in terms of “*output a unit of data constituting the non-replacement/replacement data each time a unit of data constituting the data stream is received*”

Devara teaches that it is well known to have a system to output a unit of data constituting the non-replacement/replacement data each time a unit of data constituting the data stream is received (**the available bandwidth estimate is employed to prioritize and schedule data insertion within the transport stream. Scheduled data is inserted by replacement of selected packets within the received transport stream before forwarding -- [0006]**) in order to make the system more efficient.

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It would have been obvious to one ordinary skill in the art when the invention was made to modify Lu's invention by insertion of data within an MPEG-2 transport stream by replacing null packets (and any other replaceable packets) is one option for content insertion. However, simple insertion of data packets for null packets does not allow judicious use of available bandwidth, and may not suffice to insert data services efficiently without disturbing the broadcast stream. Currently the MPEG-2 transport stream utilizes "null" packets--packets identified by the packet type identifier ("PId") number 8191--as fillers to fill in the bandwidth not utilized by the audio/video streams or any other useful streams. therefore, a need in the art for adaptive insertion of content within a digital broadcast streams, such as an MPEG-2 transport stream, to enable timely delivery of data and maximum utilization of available bandwidth without disturbing the broadcast stream in a destructive manner, as taught by Devara [0004-0005].

Regarding claim 2, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Devara further teaches wherein the determining unit includes: a judging sub-unit operable to, each time a unit of data is received, judge whether the received unit of data constitutes the replacement object data; and a comparing sub-unit operable to compare the total number of units of data constituting the replacement object data that have been received during the time period with the total number of units of data constituting the replacement data that have been output during the time period, wherein the determining unit determines to perform the

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sequential output of data if it is found as a result of the comparison by the comparing sub-unit that the total number of units of data constituting the replacement data that have been output during the time period is no larger than the total number of units of data constituting the replacement object data that have been received during the time period **(prioritization/scheduling – [0026])**.

Regarding claim 3, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the data output unit includes a storage sub-unit operable to store the non-replacement-object data, and the data output unit reads a unit of data constituting the non-replacement-object data from the storage sub-unit and outputs the read unit of data each time a unit of data constituting the non-replacement-object data is received while the sequential output of data is not performed, and if the determining unit determines not to perform the sequential output of data, reads a unit of data constituting the non-replacement-object data from the storage sub-unit and outputs the read unit of data each time a unit of data constituting the data stream is received **(storage device – [0038])**.

Regarding claim 4, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the determining unit includes: a judging sub-unit operable to, each time a unit of data is received, judge whether the received unit of data constitutes the replacement object data; a calculating sub-unit operable to calculate a replacement excess count value by subtracting (i) the total

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number of units of data constituting the replacement data that have been output during the time period from (ii) the total number of units of data constituting the replacement object data that have been received during the time period; and a count value judging sub-unit operable to judge whether the replacement excess count value is smaller than the predetermined number as in the predetermined number of units of data constituting the replacement data that are output sequentially, and the determining unit determines to perform the sequential output of data if the count value judging sub-unit judges that the replacement excess count value is no smaller than the predetermined number **(The time frame T of incoming digital data transport stream 200 comprises non-replaceable packets 201-203 and 207-209, replaceable packets 204-206, and null packets 210-211 – [0029-0038]).**

Regarding claim 5, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the determining unit includes: a judging sub-unit operable to, each time a unit of data is received, judge whether the received unit of data constitutes the replacement object data; a calculating sub-unit operable to calculate a replacement excess count value by subtracting (i) the total number of units of data constituting the replacement data that have been output during the time period from (ii) the total number of units of data constituting the replacement object data that have been received during the time period; and a count value judging sub-unit operable to judge whether the replacement excess count value is no smaller than half of the predetermined number as in the predetermined number of units of data

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constituting the replacement data that are output sequentially, and the determining unit determines to perform the sequential output of data if the count value judging sub-unit judges that the replacement excess count value is no smaller than half of the predetermined number **(The time frame T of incoming digital data transport stream 200 comprises non-replaceable packets 201-203 and 207-209, replaceable packets 204-206, and null packets 210-211 – [0029-0038]).**

Regarding claim 6, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the data stream includes a plurality of types of replacement object data, the data output unit includes a replacement data storage sub-unit operable to store a plurality of types of replacement data that respectively correspond to the plurality of types of replacement object data, and the determining unit determines whether to perform the sequential output of a predetermined number of units of data constituting any of the plurality of types of replacement data, based on a result of comparison between each pair of (i) a total number of units of data constituting one of the plurality of types of replacement object data that have been received during the time period and (ii) a total number of units of data constituting one of the plurality of types of replacement data, which corresponds to the type of replacement object data in (i), that have been output during the time period **(The time frame T of incoming digital data transport stream 200 comprises non-replaceable packets 201-203 and 207-209, replaceable packets 204-206, and null packets 210-211 – [0029-0038]).**

Regarding claim 7, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the determining unit calculates the replacement excess count value for each pair of a type of replacement object data and a corresponding type of replacement data, and if one or more replacement excess count values calculated by the determining unit are smaller than "0", the determining unit selects a type of replacement data among one or more types of replacement data corresponding to the one or more replacement excess count values that are smaller than "0", based on a predetermined criterion, and determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data **(ach of the M most recently received original data packets in the summation is scaled by a weighting factor, $a(k)$ – [0013])**.

Regarding claim 8, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the determining unit selects a type of replacement data that corresponds to the smallest value among the one or more replacement excess count values, and determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data **(ach of the M most recently received original data packets in the summation is scaled by a weighting factor, $a(k)$ – [0013])**.

Regarding claim 9, Lu and Devara together taught the data replacement output

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apparatus as in claim 1 above. Devara further teaches wherein different priority levels are respectively assigned to the plurality of types of replacement data, and the determining unit selects a type of replacement data to which the highest priority level has been assigned among one or more types of replacement data that correspond to the one or more replacement excess count values, and determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data **(prioritization/scheduling – [0026])**..

Regarding claim 10, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein a type of replacement data is pre-selected from the plurality of types of replacement data, and if a replacement excess count value for the pre-selected type of replacement data is smaller than "0", the determining unit selects the pre-selected type of replacement data, and if the replacement excess count value for the pre-selected type of replacement data is no smaller than "0", the determining unit selects a type of replacement data that corresponds to the smallest value among the one or more replacement excess count values, and determines to perform the sequential output of a predetermined number of units of data constituting the selected type of replacement data **(ach of the M most recently received original data packets in the summation is scaled by a weighting factor, $a(k)$ – [0013])**.

Regarding claim 11, Lu and Devara together taught the data replacement output

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apparatus as in claim 1 above. Lu further teaches wherein different priority levels are respectively assigned to the plurality of types of replacement data and the non-replacement-object data, the determining unit calculates the replacement excess count value for each pair of a type of replacement object data and a corresponding type of replacement data, and if one or more replacement excess count values calculated by the determining unit are smaller than "0", and if any priority level assigned to a type of replacement data corresponding to a replacement excess count value smaller than "0" is no smaller than a priority level assigned to the non-replacement-object data, the determining unit determines to perform the sequential output of a predetermined number of units of data constituting any type of replacement data corresponding to any of replacement excess count values smaller than "0" **(ach of the M most recently received original data packets in the summation is scaled by a weighting factor, $a(k) - [0013]$)**.

Regarding claim 12, Lu and Devara together taught the data replacement output apparatus as in claim 1 above. Lu further teaches wherein the data stream includes a plurality of types of replacement object data, the data output unit includes a post-replacement data storage sub-unit operable to store a plurality of types of replacement data that respectively correspond to the plurality of types of replacement object data, and the determining unit determines whether to perform the sequential output of a predetermined number of units of data constituting any of the plurality of types of replacement data, based on a result of comparison between (i) a total number of units

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of data constituting the plurality of types of replacement object data that have been received during the time period and (ii) a total number of units of data constituting the plurality of types of replacement data that have been output during the time period (**FIG. 3 illustrates in greater detail selected portions of the local broadcast facility according to one embodiment of the present invention – [0020]**).

Claims 13-23 list all the same elements of **claim 1**, but in apparatus, method, control, computer readable medium, and computer readable recording medium, rather than apparatus form. Therefore, the supporting rationale of the rejection to **claim 1** applies equally as well to **claims 13-23**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the

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PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sulaiman Nooristany 12/15/2008

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446